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# Financial Performance Analysis of Farmer-producer Organizations in Anantapuram District of Andhra Pradesh

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## ABSTRACT

The study was conducted during the period from September, 2020 to August, 2022 at Anantapuram district of Andhra Pradesh, India to analyse the financial viability of Farmer-Producer Organizations. This study evaluated the financial performance of five FPOs, namely Tadipatri Horticulture FPO, Sri Venkateswara Swamy FPO, Sri Ramaswamy FPO, Sri Peddamma Thalli FPO, and Narpala Rythunestam FPC in Anantapuram district of Andhra Pradesh, a drought-prone and resource-constrained region. Using audited financial statements from 2018 to 2022, key financial indicators, including current ratio, return on assets (ROA), return on equity (ROE), and debt–equity ratio, were analyzed to assess liquidity, profitability, and leverage. The findings revealed significant variations across the evaluated FPOs. Tadipatri Horticulture FPO exhibited robust profitability (ROA 0.34; ROE 0.19), while Narpala Rythunestam FPC demonstrated strong liquidity (current ratio 2.7) and efficient resource utilization (ROA 0.35). Sri Venkateswara Swamy FPO showed rapid membership and share capital growth (97%) but faced liquidity constraints (current ratio 1.04) and higher debt dependence (DER 0.89). Sri Ramaswamy and Sri Peddamma Thalli FPOs achieved moderate financial progress, though declining liquidity ratios highlighted working capital challenges. Comparative analysis suggested that the financial sustainability of FPOs is closely linked to member mobilization, equity participation, prudent debt management, and market integration. The results emphasized the need for context-specific policy support, particularly in improving access to concessional credit, strengthening value chain linkages and building managerial capacities. Overall, the study highlighted the critical role of financial health in determining the resilience and long-term sustainability of FPOs in semi-arid regions like Anantapuram district of Andhra Pradesh.

**KEYWORDS:** Capital, current, debt–equity, liquidity, membership, profitability, ratio, share

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***Data Availability Statement:*** Legal restrictions are imposed on the public sharing of raw data. However, author have full right to transfer or share the data in raw form upon request subject to either meeting the conditions of the original consents and the original research study. Further, access of data needs to meet whether the user complies with the ethical and legal obligations as data controllers to allow for secondary use of the data outside of the original study.

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## 1. INTRODUCTION

Agriculture remains the primary source of livelihood for nearly half of India's population, yet the sector is predominantly composed of small and marginal farmers owning less than two hectares of land (Vinayak et al., 2019). This fragmented landholding structure, combined with limited access to quality inputs, institutional credit, and remunerative markets, has historically constrained both productivity and farm incomes (Singh et al., 2018). Although small and marginal farmers play a pivotal role in ensuring national food security, they continue to face persistent economic, social, and environmental challenges. (Ravikishore et al., 2025). In recent years, Farmer-Producer Organizations (FPOs) have emerged as a key institutional mechanism to address these challenges by aggregating producers, enhancing bargaining power, and enabling direct market linkages (Govil et al., 2020; Kumari et al., 2022). Drawing on global experiences of collective action, the rapid expansion of FPOs in India has been propelled by policy support from the Small Farmers' Agribusiness Consortium (SFAC), the National Bank for Agriculture and Rural Development (NABARD), and several state-level initiatives (Manaswi et al., 2018; Phansalkar and Paranjape, 2021). Functioning as registered producer companies under the Companies Act, 2013, FPOs adopt a hybrid structure that integrates the social objectives of cooperatives with the operational efficiencies of private enterprises (Murray, 2011). Financial statement analysis emphasizes the analysis and interpretation of the balance sheet and the corresponding income statement for determining the company's strengths and weaknesses. It establishes a significant relationship between the various items of the financial statements to show how a company utilizes the stakeholders' funds and resources to conduct its business (Ravinder et al., 2013). Understanding the financial performance of these organizations through systematic analysis of financial information provides deeper insights into actual operational outcomes and management efficiency, thereby enabling policymakers and stakeholders to identify critical bottlenecks (Prabhavathi et al., 2022). Financial performance analysis is therefore essential for evaluating the viability and sustainability of FPOs. Metrics such as current ratio, return on assets (ROA), return on equity (ROE), and debt–equity ratio offer quantitative measures of liquidity, profitability, and leverage, which collectively determine the operational resilience of these entities (Deka et al., 2020; Adhikari et al., 2021). While existing literature has extensively examined the socio-economic impacts of FPOs (Rathour et al., 2022; Singh et al., 2022), there remains a paucity of studies that systematically assess their financial health, especially in resource-constrained agro-climatic zones. Anantapuram district of Andhra Pradesh presents a distinctive case for such investigation. Located in a scarce rainfall zone, it is characterized by drought-prone conditions and low cropping intensity, making farmer collectivization both essential and challenging (Ravikishore et al., 2024). In such contexts, robust financial management is crucial for ensuring the long-term sustainability of Farmer-Producer Companies (FPCs). Equally vital is building the financial management capacity of member farmers, given its role as a sensitive yet decisive determinant of organizational viability and business performance (Soumyadeep and Ritambhara, 2024). Establishing financially strong, sustainable, and member-owned producer organizations enables farmers to improve productivity through cost-effective and sustainable resource utilization, ultimately leading to higher returns on their produce (Vedasri et al., 2018). Assessing the financial performance of FPOs in regions like Anantapuram can yield actionable insights for policymakers, development agencies, and the organizations themselves, thereby informing strategies that enhance economic sustainability and farmer welfare. Against this backdrop, the present study evaluates the financial performance of selected FPOs in Anantapuram district over multiple financial years, employing key financial ratios to assess liquidity, profitability, and leverage. The findings are intended to contribute to the literature by providing empirical evidence from a semi-arid, resource-constrained context, supporting informed decision-making for strengthening FPOs in similar agro-ecological regions.

## 2. MATERIALS AND METHODS

The study was conducted in the Anantapuram district of Andhra Pradesh during the period from September, 2020 to August, 2022. The district is in a scarce rainfall zone of the southwestern part of Andhra Pradesh and lies approximately between 14.68° North Latitudes and 77.63° West longitude. An exploratory sequential design was followed in the present study, including a qualitative approach followed by a quantitative approach. The list comprising 90 well-established, registered, and functioning Farmer Producer Organisations (FPOs) in Anantapuram district of Andhra Pradesh was obtained from the National Bank for Agriculture and Rural Development (NABARD), Krishi Vigyan Kendra (KVK), and Non-Governmental Organisations. Out of these, a total of five FPOs, namely Sri Venkateswara Swamy FPO, Sri Peddamma Thalli FPO, Sri Ramaswamy FPO, Narpala Rythunestam FPC Ltd, and Tadipatri Horticulture FPO, were selected randomly, considering the differential period of services rendered to the farming community. From each FPO, respondents were selected randomly, comprising five Board of Directors (BOD) and fifteen farmer members, making the sample size of 20 respondents from each FPO. Thus, from five

FPOs, covering 75 FPO member farmers and 25 BODs with a total of 100 respondents were selected for the study. A structured data collection tool was utilized to collect the data from the producer members (100) of FPOs.

*2.1. Financial performance of different FPOs*

The year-wise financial performance of the selected FPOs was assessed using key financial indicators such as the current ratio, return on assets, return on equity and debt–equity ratio, derived from their respective balance sheets.

*2.2. Current ratio*

The current ratio was calculated to measure the financial status of the FPO. A ratio greater than one indicated that the FPO is capable of meeting its short-term financial obligations effectively, whereas a ratio less than one suggested that the FPO's current liabilities exceed its current assets.

Current ratio=Current assets/Current liabilities

*2.3. Return on assets (ROA)*

Return on Assets (ROA) revealed the profitability of a FPO. It gives the percentage profit earned by the FPO in relation to its overall usage of resources.

Return on assets=Net income/Total assets

*2.4. Return on equity (ROE)*

Return on Equity (ROE) is also a profitability ratio that gives the profit generated by the FPO with the money shareholders have invested.

Return on equity=Net profit/Equity

*2.5. Debt–equity ratio*

Debt–equity ratio indicated the proportion of the FPO's assets that are being financed through debts. The high debt equity ratio generally indicated FPO's aggressiveness in financing its growth with debt.

Debt equity ratio=Total liabilities/ Equity

## 3. RESULTS AND DISCUSSION

The data in the Table 1 indicated the financial performance analysis of Farmer-Producer Organizations in Anantapuram District.

*3.1. Financial performance of tadipatri horticulture FPO*

Tadipatri Horticulture FPO is in Tadipatri town of Anantapur District. This FPO began operations in the year 2016 and was formally registered as a company in the same year. The audited financial statements of the Tadipatri Horticulture Farmer Producer Organisation (FPO) for FY2018 and FY2022, as presented in Table 1 revealed clear progress in membership, capitalisation, assets and profitability.

Membership increased from 400 to 520 (+30%), accompanied by a proportional rise in share capital (₹ 4.40 lakh to ₹5.72 lakh). Current assets doubled from ₹3.69 lakh to ₹7.60 lakh (+106.2%), while current liabilities rose by 74.5% (₹3.50 lakh to ₹6.10lakh). This lifted the current ratio from 1.05 to 1.24, indicating a moderate improvement in liquidity.

Total assets grew nearly 70% (₹5.61 lakh to ₹9.53 lakh), supported by an increase in owned funds (₹7.75lakh to ₹16.67 lakh; +115.1%). Net income rose almost eight-fold (₹0.41 lakh to ₹3.25 lakh), leading to higher profitability. Return on assets improved from 0.07 to 0.34 (7% to 34%) and return on equity from 0.05 to 0.19 (5% to 19%). The leverage position strengthened as the debt–equity ratio (interpreted conventionally as total liabilities ÷ owned funds) declined from ~0.49 to ~0.38, reflecting lower reliance on external debt and greater equity strength.

The results highlighted a positive trajectory in financial health, scale and sustainability of the FPO. The growth in membership and share capital indicated increasing trust and participation among farmers, aligning with findings from Kakati and Roy (2021), who reported that member engagement and capital mobilization are critical drivers of FPO sustainability in India in their study on financial performance of farmer-producer companies of India. Liquidity improvements, though modest, were significant since many FPOs operated with tight working capital constraints. A current ratio above 1.0 is a minimum requirement for short-term solvency; however, international cooperative finance literature suggested a safer benchmark of around 2.0 for robust liquidity (Anonymous, 2000). Thus, while the ratio improved, further attention to receivables and inventory management could strengthen the resilience of FPOs.

Profitability indicators showed marked improvement, with ROA (34%) and ROE (19%) exceeding levels reported in earlier studies of Indian FPOs, where many organisations struggled to generate even moderate returns (Thangavel et al., 2025). The strong upward trend in net income suggested better operational efficiency, possibly due to improved market linkages or aggregation efficiencies. Comparable evidence from Vietnam also highlighted that effective resource use and governance significantly enhance cooperative profitability (Pham, 2022).

The reduction in leverage underscores prudent financial management. Lower debt-equity ratios reduced financial vulnerability, a critical factor given that many FPOs face high borrowing costs and limited access to institutional credit (Gurung and Choubey, 2023). Strengthening owned funds, as observed here, is consistent with international recommendations that sustainable cooperatives rely on member capital rather than debt financing.

Table 1: Financial performance of FPOs in Anantapuram district of Andhra Pradesh

| Sl. No. | Particulars | Tadipatri Horticulture FPO | | Sri Venkateswara Swamy FPO | | Sri Ramaswamy FPO | | Sri Peddamma Thalli FPO | | Narpala Rythunestam FPC Ltd | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY2018 | FY2022 | FY2018 | FY2022 | FY2018 | FY2022 | FY2019 | FY2022 | FY 2020 | FY2022 |
| 1. | Members | 400 | 520 | 300 | 591 | 440 | 550 | 490 | 605 | 300 | 392 |
| 2. | Share capital (₹) | 4,40,000 | 5,72,000 | 3,30,000 | 6,50,100 | 4,84,000 | 6,05,000 | 4,90,000 | 6,05,000 | 3,00,000 | 3,92,000 |
| 3. | Current assets (₹) | 3,68,587 | 7,60,194 | 2,99,013 | 6,62,765 | 5,74,435 | 8,86,020 | 5,81,306 | 8,76,925 | 2,15,765 | 1,91,063 |
| 4. | Current liabilities (₹) | 3,49,658 | 6,10,019 | 2,95,370 | 6,31,750 | 2,87,745 | 5,89,348 | 2,85,529 | 5,75,547 | 1,12,857 | 70,562 |
| 5. | Total assets (₹) | 5,61,057 | 952,870 | 4,69,689 | 976,073 | 6,92,010 | 10,16,376 | 6,97,310 | 10,78,542 | 2,89,310 | 2,65,608 |
| 6. | Total liabilities (₹) | 3,76,856 | 6,32,546 | 6,36,155 | 10,54,717 | 4,82,820 | 7,60,102 | 4,83,430 | 7,87,201 | 1,21,389 | 2,73,346 |
| 7. | Owned funds (₹) | 7,74,992 | 16,66,735 | 6,79,013 | 10,93,067 | 9,95,763 | 13,18,846 | 9,15,752 | 12,76,352 | 9,63,450 | 11,95,820 |
| 8. | Net income (₹) | 40,755 | 3,25,000 | 30,705 | 2,05,534 | 31,354 | 2,23,000 | 29,376 | 1,54,000 | 39,500 | 95,400 |
| 9. | Current ratios (CR) (3÷4) (%) | 1.05 | 1.24 | 1.01 | 1.04 | 1.99 | 1.50 | 2.03 | 1.52 | 1.91 | 2.7 |
| 10. | Return on assets (ROA) (8÷5) (%) | 0.07 | 0.34 | 0.06 | 0.210 | 0.04 | 0.22 | 0.04 | 0.14 | 0.13 | 0.35 |
| 11. | Return on equity (ROE) (8÷7) (%) | 0.05 | 0.19 | 0.04 | 0.188 | 0.03 | 0.17 | 0.03 | 0.12 | 0.04 | 0.08 |
| 12. | Debt equity ratio (DER) (5÷7) (%) | 0.72 | 0.571 | 0.69 | 0.89 | 0.69 | 0.77 | 0.76 | 0.24 | 0.3 | 0.22 |

FY: Financial Year

Overall, the Tadipatri Horticulture FPO demonstrated stronger financial performance compared to many peer FPOs, though further strengthening of liquidity and formalization of ratio reporting will enhance long-term credibility and comparability with cooperative benchmarks.

*3.2. Financial performance of Sri Venkateswara Swamy FPO*

Glance through Table 1 presented the financial performance of Sri Venkateswara Swamy FPO. This FPO is located at Gandlapadu village, Putluru Mandal in Anantapur District. This FPO was established in 2018 and formally registered as a company in 2018 with 591 active members as of 2022. Between FY2018 and FY2022, membership of the Sri Venkateswara Swamy FPO nearly doubled, increasing from 300 to 591 (+97%). Share capital rose from ₹ 3.30 lakh to ₹ 6.50 lakh (+97%), reflecting higher member participation.

Current assets grew substantially (₹2.99 lakh to ₹6.63 lakh; +122%), while current liabilities also more than doubled (₹2.95 lakh to ₹6.32 lakh; +114%). Consequently, the current ratio improved only marginally, from 1.01 to 1.04, indicating limited gains in liquidity. Total assets increased from ₹4.70 lakh to ₹9.76 lakh (+108%), and owned funds rose from ₹6.79 lakh to ₹10.93 lakh (+61%). Net income expanded nearly sevenfold, from ₹30,705 to ₹2.05 lakh, reflecting stronger earnings capacity. Profitability indicators showed significant improvement: ROA increased from 0.06 to 0.21, and ROE from 0.04 to 0.19, suggesting greater efficiency in asset utilization and member equity returns. However, the debt–equity ratio increased from 0.69 to 0.89, implying a rising reliance on debt relative to equity.

The results indicated substantial growth in scale, capitalization and profitability of the FPO, consistent with broader evidence that FPOs strengthen farmer incomes and bargaining power when they effectively mobilize membership and capital (Kakati and Roy, 2021). The strong growth in net income and profitability ratios suggested improved operational efficiency, possibly due to better aggregation, market linkages or cost control. Similar trends have been observed in successful farmer-producer companies across India, where profitability improves with maturity and membership scale (Thangavel et al., 2025). However, the liquidity position remains weak. Despite asset growth, the current ratio stayed close to 1.0, which is only just sufficient for meeting short-term obligations. International cooperative finance literature recommended a ratio closer to 2.0 for stronger solvency (Anonymous, 2000). This indicated that the FPO may still face working capital constraints, echoing findings by Nayak (2016); Gurung and Choubey (2023), who reported that many Indian FPOs struggle with liquidity management in their study on determinants of agricultural households to join Farmer Producer Organisations (FPOs) in Northeast India: An Evidence from Sikkim.

The increased in debt–equity ratio (0.69 to 0.89) suggested greater dependence on external financing. While moderate leverage can aid expansion, rising debt levels may increase financial vulnerability if income streams fluctuate. Studies from Vietnam showed that cooperative performance and sustainability are strongly linked to balanced capital structures and prudent financial management (Pham, 2022). Overall, the Sri Venkateswara Swamy FPO demonstrated promising progress in scale and profitability but requires closer attention to liquidity and leverage management to ensure long-term sustainability.

*3.3. Financial performance of Sri Ramaswamy FPO*

The financial analysis of Sri Ramaswamy FPO (Table 1) between FY 2018 and FY 2022 highlighted notable improvements in its organizational and financial performance.

The membership base increased from 440 in 2018 to 550 in 2022, indicating growing trust and collective participation among farmers. Consequently, the share capital also rose from ₹4.84 lakh to ₹6.05 lakh, reflecting enhanced member investment and confidence in the institution's sustainability. Similar growth trends in farmer participation and capital contribution have been observed in successful FPOs across India (Nikam et al., 2023).

Total assets showed a substantial increase from ₹6.92 lakh (2018) to ₹10.16 lakh (2022), while liabilities rose from ₹4.82 lakh to ₹7.60 lakh during the same period. This indicates expansion in business operations, though accompanied by higher obligations. Current assets almost doubled from ₹5.74 lakh to ₹8.86 lakh, but current liabilities increased sharply from ₹2.87 lakh to ₹5.89 lakh, leading to a decline in the current ratio from 1.99 to 1.50. Although still above the critical benchmark of 1, this reduction suggested liquidity stress. According to Singh and Singh (2020), maintaining a current ratio between 1.5 and 2.0 is considered healthy for FPOs to ensure adequate liquidity. The net income of the FPO grew remarkably from ₹31,354 in 2018 to ₹2.23 lakh in 2022, indicating improved profitability and better operational efficiency. This is further supported by the rise in Return on Assets (ROA) from 0.04% to 0.22% and Return on Equity (ROE) from 0.03% to 0.17%. These improvements suggested that the FPO has become more efficient in utilizing its assets and equity base to generate income. Prior studies also emphasized that effective collective marketing and value addition significantly enhance profitability in farmer-producer organizations.

The Debt-Equity Ratio (DER) increased from 0.69 to 0.77, indicating a moderate rise in dependence on external borrowings relative to owned funds. While a DER below 1 is generally considered manageable, the rising trend underscores the need for prudent debt management. Excessive reliance on debt financing may pose long-term risks to FPO sustainability, especially when market fluctuations affect repayment capacities.

Overall, the FPO has demonstrated commendable progress in terms of membership expansion, asset growth, and profitability over the study period. However, the decline in liquidity (current ratio) and rising debt-equity ratio signal potential challenges in working capital management. Strengthening collective marketing linkages, diversifying income streams, and improving access to institutional credit at concessional rates could further enhance the financial resilience of the FPO.

### *3.4. Financial performance of Sri Peddamma Thalli FPO*

The financial analysis of Sri Peddamma Thalli FPO between FY2019 and FY2022 revealed significant progress in terms of membership, capitalization and profitability, alongside structural shifts in its financial health.

The membership base increased from 490 in 2019 to 605 in 2022, reflecting the rising trust of farmers in the collective model. The share capital also improved from ₹4.90 lakh to ₹6.05 lakh, indicating stronger member commitment towards equity participation. Similar findings were reported by Singh et al. (2023), who emphasized that increased farmer participation enhances the bargaining power and sustainability of FPOs in their study on constraints in operationalizing FPOs in Punjab and strategies to mitigate them. Total assets increased considerably from ₹6.97 lakh in 2019 to ₹10.79 lakh in 2022, while liabilities also grew from ₹4.83 lakh to ₹7.87 lakh. The sharp rise in current assets (₹5.81 lakh to ₹8.77 lakh) shows better liquidity creation, but current liabilities nearly doubled, leading to a decline in the current ratio from 2.03 to 1.52. Though still within the acceptable range (>1.5), the declining trend reflects growing liquidity pressure. Net income showed a remarkable growth from ₹29,376 to ₹1.54 lakh, demonstrating improved operational efficiency and market engagement. Correspondingly, Return on Assets (ROA) increased from 0.04% to 0.14% and Return on Equity (ROE) from 0.03% to 0.12%, though these remain modest compared to corporate agribusiness standards.

An important structural change was noted in the Debt-Equity Ratio (DER), which declined sharply from 0.76 to 0.24. This indicates that the FPO has reduced its reliance on external borrowings and strengthened its financial stability through its own funds. A lower DER enhanced long-term sustainability by reducing interest obligations.

Overall, Sri Peddamma Thalli FPO exhibited significant improvements in membership, capitalization, profitability, and financial stability during the study period. The reduction in DER is a positive sign of financial prudence, though the declining current ratio suggested the need for efficient working capital management. To further strengthen its financial base, the FPO may focus on value-added activities, expanding market linkages, and improving credit access at concessional rates.

### *3.5. Financial performance of Narpala Rythunestam FPC Ltd*

The financial analysis of Narpala Rythunestam FPC Ltd between FY2020 and FY2022 highlighted significant improvements in membership, profitability and financial stability, although some fluctuations in asset values are observed (Table 1).

Membership increased from 300 in 2020 to 392 in 2022, accompanied by a rise in share capital from ₹3.00 lakh to ₹3.92 lakh. This reflects enhanced farmer participation and confidence in the FPC's operations. Previous studies (Dey, 2018; Singh et al., 2023) have also shown that an expanding member base strengthens collective bargaining power, reduces transaction costs, and enhances the sustainability of farmer-producer organizations (FPOs). While current assets declined from ₹2.16 lakh to ₹1.91 lakh and total assets decreased from ₹2.89 lakh to ₹2.66 lakh, current liabilities reduced more sharply (from ₹1.13 lakh to ₹0.71 lakh), resulting in an improved current ratio from 1.91 to 2.7. This indicated a strong liquidity position, suggesting that the FPC is now better placed to meet short-term obligations. Interestingly, total liabilities increased from ₹1.21 lakh to ₹2.73 lakh, showed higher financial obligations, possibly due to increased borrowings or credit usage. However, the rising owned funds (₹9.63 lakh to ₹11.96 lakh) ensured that the debt-equity ratio (DER) remained low, declining from 0.30 to 0.22, reflecting a reduced dependence on external debt. Net income showed substantial improvement, rising from ₹39,500 to ₹95,400. This growth is reflected in the increase in Return on Assets (ROA) from 0.13% to 0.35% and Return on Equity (ROE) from 0.04% to 0.08%. Despite being modest, the rising trend indicates better resource utilization and improved operational efficiency.

Overall, Narpala Rythunestam FPC Ltd demonstrated commendable progress in profitability, liquidity and equity strength between 2020 and 2022. The decline in total assets alongside rising liabilities may indicate growing investments financed through borrowings, but the low DER ensures financial safety. Going forward, focusing on asset expansion, value-added services and wider market linkages could further enhance the financial performance of the FPC. These results were in line with the findings of Sandeep and Kameswari (2024) in their study on performance analysis of farmer producer organisations of Uttarakhand.

### *3.6. Comparative analysis of FPOs' financial performance*

The comparative assessment of the five Farmer-Producer Organizations (FPOs) highlighted significant variations in membership growth, capitalization, liquidity, profitability and leverage management during the study period (Table 2).

In terms of membership and share capital growth, Sri Venkateswara Swamy FPO exhibited the highest increase (97%), nearly doubling its base in both indicators. This reflects successful mobilization of farmers and higher collective equity contributions, strengthening its bargaining power and operational base. Tadipatri Horticulture and Narpala Rythunestam FPC followed with moderate growth of around 30%, while Sri Ramaswamy (25%) and Sri Peddamma Thalli (23%) registered relatively modest expansions. These findings align with earlier reports by Himadri et al. (2023), who emphasized that member mobilization and equity participation are critical for the sustainability and bargaining strength of FPOs in their study on comparative financial performance analysis of farmer-producer companies in Eastern Uttar Pradesh.

Liquidity analysis, measured through the current ratio, showed a wide disparity. Narpala Rythunestam FPC recorded the strongest liquidity at 2.7, comfortably exceeding the benchmark ratio of 2.0 recommended for robust solvency in cooperatives (Anonymous, 2000). This indicated efficient short-term financial management and strong repayment capacity. By contrast, Sri Venkateswara Swamy FPO exhibited the weakest liquidity (1.04), only marginally above the critical threshold of 1.0, suggesting that it operates under tight working capital constraints. Tadipatri Horticulture (1.24), Sri Ramaswamy (1.50), and Sri Peddamma Thalli (1.52) maintained moderate liquidity positions, but with declining trends over time, indicating emerging challenges in balancing asset growth with working capital needs.

Table 2: Comparative analysis of FPOs' financial performance

| Indicators | Tadipatri Horticulture FPO | Sri Venkateswara Swamy FPO | Sri Ramaswamy FPO | Sri Peddamma Thalli FPO | Narpala Rythunestam FPC |
|---|---|---|---|---|---|
| Membership growth (%) | 30 | 97 | 25 | 23 | 31 |
| Share capital growth (%) | 30 | 97 | 25 | 23 | 31 |
| Liquidity (Current ratio, latest) | 1.24 | 1.04 | 1.5 | 1.52 | 2.7 |
| Profitability (Net income, Latest ₹) | 325000 | 205534 | 223000 | 154000 | 95400 |
| ROA (Latest) | 0.34 | 0.21 | 0.22 | 0.14 | 0.35 |
| ROE (Latest) | 0.19 | 0.19 | 0.17 | 0.12 | 0.08 |
| Debt-Equity ratio (Latest) | 0.57 | 0.89 | 0.77 | 0.24 | 0.22 |

In terms of profitability, Tadipatri Horticulture FPO recorded the highest net income (₹3.25 lakh), reflecting stronger market linkages and improved operational efficiency. Sri Ramaswamy (₹2.23 lakh) and Sri Venkateswara Swamy (₹2.05 lakh) also demonstrated commendable profitability, whereas Sri Peddamma Thalli (₹1.54 lakh) and Narpala Rythunestam (₹0.95 lakh) reported relatively modest earnings. When normalized by asset base, however, Narpala recorded the highest Return on Assets (ROA=0.35), marginally ahead of Tadipatri (0.34), indicating superior efficiency in utilizing its relatively smaller asset base. The ROA values of Ramaswamy (0.22) and Venkateswara Swamy (0.21) also suggested good resource utilization, while Peddamma Thalli (0.14) lags behind. Return on Equity (ROE) was highest for Tadipatri and Venkateswara Swamy (0.19 each), followed by Ramaswamy (0.17), with Peddamma Thalli (0.12) and Narpala (0.08) trailing. These patterns resonated with findings by Singh and Vatta (2019); Thangavel et al. (2025), who observed that mature and market-oriented FPOs achieve higher profitability ratios compared to newly established or resource-constrained organizations in their study on financial health of farmer-producer companies in Tamil Nadu: challenges and prospects.

With respect to capital structure, the Debt-Equity Ratio (DER) varied markedly across the organizations. Sri Peddamma Thalli (0.24) and Narpala Rythunestam (0.22) recorded the lowest DERs, reflecting low dependence on borrowings and stronger equity financing. Tadipatri also displayed a safe capital structure with a DER of 0.57. Conversely, Sri Venkateswara Swamy (0.89) and Sri Ramaswamy (0.77) showed relatively high leverage positions, indicating greater reliance on external debt to finance growth. While moderate leverage can aid expansion, excessive dependence on debt increased financial vulnerability, especially when income streams are volatile.

Overall, the results indicated that Tadipatri Horticulture FPO is the most financially robust, combining high profitability with moderate liquidity and reduced leverage. Narpala Rythunestam, though smaller in scale, stands out for its strong liquidity and efficient use of assets, suggesting a stable foundation for future expansion. Sri Venkateswara

Swamy FPO demonstrated rapid membership and capital growth but is constrained by weak liquidity and high leverage, which may undermine sustainability if not managed carefully. Sri Ramaswamy and Sri Peddamma Thalli FPOs present balanced growth patterns, though both require greater attention to liquidity management and debt optimization. These findings collectively confirmed the heterogeneity in FPO performance trajectories and emphasize the importance of strategic financial management. Strengthening liquidity through concessional credit access, enhancing equity mobilization, and maintaining prudent leverage are essential for ensuring the long-term viability of FPOs in India. The findings are in line with the analysis of Nalini et al. (2017) who reported that FPOs have the potential to provide benefits through effective collective action.

### *3.7. Policy implications for financial sustainability of FPOs*

The comparative analysis of the five FPOs highlighted several policy-relevant insights for strengthening Farmer-Producer Organizations in specific to Anantapuram district of Andhra Pradesh and in general to entire country.

The findings confirmed that membership mobilization and share capital formation are fundamental for sustainability, as seen in the strong performance of Tadipatri Horticulture and Sri Venkateswara Swamy FPOs. Policies should therefore prioritize awareness campaigns, farmer training, and incentives for equity contributions to broaden participation. Strengthening member trust and ownership not only increased the capital base but also reduced dependence on external financing, a point emphasized by Kakati and Roy (2021) in their study on financial performance of farmer-producer companies of India: A study from 2013–2014 to 2018–2019.

Liquidity management emerged as a critical challenge for most FPOs, except Narpala Rythunestam, which maintained a healthy current ratio. Weak liquidity is often linked to inadequate access to working capital credit (Birthal et al., 2020). Policymakers and financial institutions should therefore develop tailored credit products for FPOs, such as low-interest revolving funds, short-term crop finance, and collateral-free loans. Linking FPOs with institutional lenders under schemes like NABARD's Producer Organization Development Fund could improve working capital access and reduce reliance on informal borrowing.

Profitability varied widely across FPOs, with Tadipatri FPO excelling while Peddamma Thalli FPO and Narpala FPO reported relatively modest earnings. This underlines the need for capacity-building in value addition, collective marketing and market linkage development. Government and NGOs should thus invest in building supply chain infrastructure, facilitating partnerships with agribusiness firms and providing market intelligence services to FPOs. Capital structure management requires policy attention, as high leverage was observed in Sri Venkateswara Swamy and Sri Ramaswamy FPOs. Excessive debt exposure may jeopardize sustainability, particularly when income streams fluctuate. Supportive policies should encourage FPOs to rely more on member equity and concessional loans rather than high-cost borrowings. Training programs on financial planning and debt management, facilitated by NABARD or state agricultural universities, could further strengthen managerial capacity.

The results pointed out the need for differentiated policy approaches. While large and rapidly growing FPOs like Venkateswara Swamy require debt management and liquidity support, smaller but financially stable FPOs like Narpala would benefit more from asset expansion and income diversification opportunities. Mid-sized organizations such as Ramaswamy and Peddamma Thalli require balanced interventions focusing on both liquidity enhancement and market-oriented growth.

### *3.8. Personal characteristics of FPO members and their linkage with financial performance*

The personal, social and communication characteristics of Farmer Producer Organization (FPO) members played a decisive role in shaping organizational efficiency, decision-making capacity and overall financial performance (Table 3). The distribution of respondents based on personal characteristics revealed that a majority of the members (46.67%) belonged to the middle age group (31–47 years), followed by old age category (42.67%), while only 10.66% were young farmers. The predominance of middle-aged farmers suggested that higher responsibility orientation, experience and economic commitment, which were critical for collective business-oriented institutions such as FPOs. The dominance of male members (76%) reflected prevailing socio-cultural norms and patriarchal decision-making patterns in agriculture. However, the presence of 24% female members indicated gradual inclusion, which can be leveraged for strengthening governance and social capital. Similar gender compositions have been reported to influence leadership structures and operational stability of FPOs. The predominance of middle-aged and moderately experienced members strengthens collective decision-making and business orientation of FPOs, thereby positively influencing organizational efficiency and financial outcomes. Similar observations were reported by Singh et al. (2022), who emphasized that behavioural and personal attributes of members significantly determine the functionality and performance of farmer producer organisations in their study on behavioural determinants of functionality of farmer producer organisations in Punjab.

Landholding pattern analysis showed that a majority of members were small (40%) and semi-medium farmers (28%), while marginal farmers constituted 12%. This indicated that FPOs primarily serve resource-constrained farmers, reinforcing their role as inclusive institutions. Smaller landholders often depended more on collective mechanisms for input procurement, credit access and market linkage, which partly explains the improved financial indicators observed in FPOs such as Tadipatri Horticulture FPO and Sri Venkateswara Swamy FPO. With respect to farming experience, more than half of the respondents (56%) possessed medium-level experience, while 26.67% had high experience. Experienced farmers tend to exhibit better risk assessment, adoption behaviour and participation in collective decision-making, which positively influences operational efficiency and profitability. This is reflected in the higher ROA and ROE values recorded by relatively mature FPOs in the study.

Extension agency contact emerged as a key enabling factor, with 66.67% of respondents had medium and 21.33% had high extension contact. Frequent interaction with KVKs, agricultural officers and development agencies facilitates timely access to technical, financial and market-related information. The medium-to-high extension exposure among members aligns with improved liquidity management and profitability indicators observed in most FPOs, except those facing working capital constraints. Mass media exposure was predominantly at medium level (68%), suggesting moderate access to agricultural information through print, electronic and digital media. Such exposure enhances awareness regarding market prices, government schemes and improved production practices, indirectly supporting better financial outcomes and business planning at the organizational level. Medium to high levels of extension agency contact and mass media exposure enhanced members' access to technical, financial and market-related information, which indirectly contributed to improved financial performance and sustainability of FPOs. This finding corroborates the results of Nalini et al. (2017), who reported that information access and institutional linkages play a crucial role in strengthening collective action and economic performance of farmer collectives in their study on Farmer Producer Organisations as farmer collectives: A case study from India.

Risk preference analysis indicated that 69.33% of members exhibited medium risk orientation, followed by 16% with high-risk preference. The moderate risk-taking behaviour suggested that FPO members increasingly perceived agriculture as a business enterprise rather than a subsistence activity. This behavioural shift is particularly important for collective marketing, input aggregation and investment decisions, which are reflected in improved net income and profitability ratios across the studied FPOs. Economic motivation levels were also predominantly medium (66.67%), with 16% of respondents showing high motivation. This indicated that while members aspire to improve income and living standards, they adopted cautious and incremental approaches to growth. Such motivation patterns contributed to stable but gradual financial growth, as observed in the balanced performance of Sri Ramaswamy and Sri Peddamma Thalli FPOs. The observed medium to high-risk preference among FPO members reflected a gradual shift from subsistence farming towards agribusiness-oriented decision-making, which supported investment, collective marketing and profitability enhancement. Similar conclusions were drawn by Rathour et al. (2022), who reported that economically motivated and moderately risk-oriented members contribute significantly to organizational resilience and income generation through FPOs in their study on socio-economic upliftment of tribal women through FPO in Bastar district of Chhattisgarh.

Overall, the findings clearly indicated that middle-aged, moderately experienced, economically motivated farmers with reasonable extension and media exposure form the backbone of financially performing FPOs (Table 3). The interaction between favourable personal characteristics and sound financial management practices enhances

Table 3: Personal characteristics of FPO members

| Sl. No. | Characteristic | Category | Frequency | Percentage (%) |
|---|---|---|---|---|
| 1. | Age | Young (<31 years) | 8 | 10.66 |
| | | Middle (31–47 years) | 35 | 46.67 |
| | | Old (>47 years) | 32 | 42.67 |
| 2. | Sex | Male | 57 | 76.00 |
| | | Female | 18 | 24.00 |
| 3. | Land holding | Marginal (<2.5 acres) | 9 | 12.00 |
| | | Small (2.5–5 acres) | 30 | 40.00 |
| | | Semi-medium (5–10 acres) | 21 | 28.00 |
| | | Medium (10–25 acres) | 12 | 16.00 |
| | | Large (>25 acres) | 3 | 4.00 |
| 4. | Farming experience | Low (<13 years) | 13 | 17.34 |
| | | Medium (13–26 years) | 42 | 56.00 |
| | | High (>26 years) | 20 | 26.67 |

Table 3: Continue...

| Sl. No. | Characteristic | Category | Frequency | Percentage (%) |
|---|---|---|---|---|
| 5. | Extension agency contact | Low | 9 | 12.00 |
| | | Medium | 50 | 66.67 |
| | | High | 16 | 21.33 |
| 6. | Mass media exposure | Low | 12 | 16.00 |
| | | Medium | 51 | 68.00 |
| | | High | 12 | 16.00 |
| 7. | Risk preference | Low | 11 | 14.67 |
| | | Medium | 52 | 69.33 |
| | | High | 12 | 16.00 |
| 8. | Economic motivation | Low | 13 | 17.33 |
| | | Medium | 50 | 66.67 |
| | | High | 12 | 16.00 |

organizational sustainability. Therefore, strengthening human capital through capacity building, leadership development and exposure-based learning is as crucial as financial and policy support for ensuring long-term viability of Farmer Producer Organizations.

## 4. CONCLUSION

Financial Performance Analysis of Farmer-Producer Organizations (FPOs) in Anantapuram district revealed notable growth in membership, share capital, and profitability. Tadipatri Horticulture FPO and Narpala Rythu Nestam FPC demonstrated stronger financial stability, while others experienced liquidity constraints and increasing leverage. Variations in liquidity and debt-equity structure indicated uneven financial health across FPOs. The findings underscored the importance of equity mobilization, efficient working capital management, prudent borrowing and strengthened market linkages to ensure sustainable financial performance and long-term resilience.

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## 6. REFERENCES

Adhikari, A., Pradhan, K., Chauhan, J.K., Reddy, S.K., 2021. Analysing the perceived impact of farmers' producer organizations (FPOs) on sustainable economic development. Indian Research Journal of Extension Education 21(2&3), 80–82. Available from: https://api.seea.org.in/uploads/pdf/2021-66-80-82.

Anonymous, 2000. USDA Rural Development, 2000. Financial management and ratio analysis for cooperative enterprises. Rural Business-Cooperative Service, Report 175. Available from: https://www.rd.usda.gov/sites/default/files/rr175.pdf, Accessed: 13.08.2025.

Deka, N., Goswami, K., Thakur, A.S., Bhadoria, P.B.S., 2020. Are farmer-producer companies ready to behave as business entities? Insights from the vegetable-based farmer companies in West Bengal, India. International Journal of Agricultural Sustainability 18(6), 521–536. https://doi.org/10.1080/14735903.2020.1794213.

Dey, K., 2018. Farmer producer companies in India; determinants of performance and viability. Economic and Political Weekly 53(35), 44–52. Available from: https://www.epw.in/journal/2018/35/special-articles/farmer-producer-companies-india.html.

Govil, R., Neti, A., Rao, M.R., 2020. Farmer producer companies: Past, present and future. Azim Premji University, Bangalore, p. 99. Available from: https://azimpremjiuniversity.edu.in/publications/2020/report/farmer-producer-companies-past-present-and-future.

Gurung, R., Choubey, M., 2023, Determinants of agricultural households to join farmer producer organisations (FPOs) in Northeast India: evidence from Sikkim. International Journal of Social Economics 50(4), 465–477. https://doi.org/10.1108/IJSE-04-2022-2016.

Himadri, R., Basavaprabhu, J., Saikat, M., 2023. Comparative financial performance analysis of farmer-producer companies in Eastern Uttar Pradesh. Economic Affairs 68(1), 479–490. https://doi.org/10.46852/0424-2513.1.2023.17.

Kakati, S., Roy, A., 2021. Financial performance of farmer-producer companies of India: A study from 2013–2014 to 2018–2019. International Journal of Rural Management 17(1), 1–19. https://doi.org/10.1177/09730052211034700.

Kumari, N., Malik, J.S., Arun, D.P., Nain, M.S., 2022. Farmer producer organizations (FPOs) for linking farmers to the market. Journal of Extension Systems 37(1), 1–6. https://doi.org/10.48165/jes.2022.38.1.1.

Manaswi, B.H., Pramod, K., Prakash, P., Anbukkani, P., Amit, K., Jha, G.K., Rao, D.U.M., 2018. Progress and performance of states in the promotion of farmer-producer organisations in India. Indian Journal of Extension Education 54(2), 108–113. Available from: https://epubs.icar.org.in/index.php/IJEE/article/view/143747.

Murray, E.V., 2011. Integration of small producers into producer companies-status and scope. NABARD

Consultancy Services Private Limited (NABCONS), Hyderabad. Available from https://www.academia.edu/25904098/Integrating_Small_Producers_into_Producer_Companies.

Nalini, B., Rama, R., Vaibhav, B., 2017. Farmer producer organisations as farmer collectives: a case study from India. Development Policy Review 1, 1–9. https://doi.org/10.1111/dpr.12274.

Nayak, A.K., 2016. Farmer producer organizations in India: policy, performance and design issues. In: Organized Retailing and Agri-Business, Springer India, New Delhi, pp: 289–303. https://doi.org/10.1007/978-81-322-2476-1_17.

Nikam, V., Haripriya, V., Kiran, K.T.M., Chand, P., 2023. Farmer Producer Organizations in India: Challenges and Prospects, Policy Paper 40, ICAR-National Institute of Agricultural Economics and Policy Research (NIAP), New Delhi. Available from: https://www.researchgate.net/profile/Vinayak-Nikam/publication/377241668_Policy_Paper_on_Farmer_Producer_Organizations_in_India_Challenges_and_Prospects/links/659d17973c472d2e8ebfb6ca/Policy-Paper-on-Farmer-Producer-Organizations-in-India-Challenges-and-Prospects.pdf.

Pham, T.M.G., 2022. Influencing factors of performance of agricultural cooperatives in the Mekong Delta, Vietnam. Journal of Agriculture and Rural Development in the Tropics and Subtropics 123(1), 97–108. https://doi.org/10.17170/kobra-202203085850.

Phansalkar, S., Paranjape, A., 2021. Making farmer-producer organisations achieve viability: A practical guide. National Association of Farmer-Producer Organizations (NAFPO). ISBN: 978-819-52-3591-9.

Prabhavathi, Y., Siddayya, M.R., Girish, M.R., Ganapathy, M.S., Sharif, M., Rama Chandra, C.T., 2022. Financial performance analysis of farmer-producer companies in the state of Andhra Pradesh. Mysore Journal of Agricultural Sciences 56(4), 331–341. Available from: https://www.cabidigitallibrary.org/doi/pdf/10.5555/20230024412.

Rathour, V., Tiwari, P.K., Pandey, P.K., Singh, K.P., Singh, D.P., 2022. Socio-economic upliftment of tribal women through FPO in Bastar district of Chhattisgarh. Indian Journal of Extension Education 58(4), 144–148. http://doi.org/10.48165/IJEE.2022.58429.

Ravikishore, M., Prudvi, A.R., Gopal, P.V.S., Johnson, M., Ujwala, R.S., Subbaiah, K.R., Supriya, P., Rani, K.S., 2024. Farmers' perception of the services of farmer-producer organisations (FPOs) in Anantapuram district of Andhra Pradesh. International Journal of Bio-resource and Stress Management 15(1), 1–11. https://doi.org/10.23910/1.2024.4982a.

Ravikishore, M., Royal, A.P., Gopal, P.V.S., Johnson, M., Rani, S.U., Reddy, B.K.K., Sujathamma, P., Rani, K.S., Supriya, P., 2025. Performance grading and constraints analysis of farmer-producer organisations (FPOs) in Anantapuram district of Andhra Pradesh. International Journal of Bio-resource and Stress Management 16(2), 1–9. https://doi.org/10.23910/1.2025.5842.

Ravinder, D., Anitha, M., 2013. Financial analysis – A study. Journal of Economics and Finance 2(3), 10–22. https://doi.org/10.9790/5933-0231022.

Sandeep, K., Kameswari, V.L.V., 2024. Performance analysis of farmer producer organisations of Uttarakhand. International Journal of Agriculture Extension and Social Development 7(6), 276–282. https://doi.org/10.33545/26180723.2024.v7.i6d.709.

Singh, G., Budhiraja, P., Vatta, K., 2018. Sustainability of farmer-producer organisations under agricultural value networks in India: A case of Punjab and Gujarat. Indian Journal of Agricultural Economics 73(3), 370–385. https://doi.org/10.22004/ag.econ.306783.

Singh, G., Vatta, K., 2019. Assessing the economic impact of farmer producer organizations. Agricultural Economics Research Review, Conference Issue, 32, 139–148. https://doi.org/10.5958/0974-0279.2019.00023.5.

Singh, M., Tiwari, D., Monga, S., Rana, R.K., 2022. Behavioural determinants of functionality of farmer producer organisations in Punjab. Indian Journal of Extension Education 58(1), 130–135. https://doi.org/10.48165/IJEE.2022.58129.

Singh, M., Tiwari, D., Sharma, A., Rana, R.K., 2023. Constraints in operationalizing FPOs in Punjab and strategies to mitigate them. Agricultural Science Digest 43(4), 530–535. https://doi.org/10.18805/ag.D-5494.

Singh, S., Singh, T., 2013. Producer companies in India: A study of organization and performance. CMA Publication No. 246, Centre for Management in Agriculture, Indian Institute of Management, Ahmedabad. Available from: https://www.iima.ac.in/sites/default/files/2022-12/2013-14_1.pdf.

Soumyadeep, D., Ritambhara, S., 2024. Financial Performance of New Generation Cooperatives in India: Assessment of selected Farmer Producer Companies in Alipurduar district of West Bengal. Indian Journal of Economics Development 20(2), 336–346. https://doi.org/10.35716/IJED-23226.

Thangavel, M., Khangar, N.S., Das, A., 2025. Financial health of farmer-producer companies in Tamil Nadu: challenges and prospects. Discover Sustainability 6,

487. https://doi.org/10.1007/s43621-025-01341-3.

Vedasri, R., Devi, K.U., Radha, Y., Umar, S.N., 2018. Financial performance of farmer-producer organisations in the Krishna district of Andhra Pradesh. Andhra Agricultural Journal 65(4), 968–973. Available from: https://aaj.net.in/wp-content/uploads/2024/04/65440.pdf.

Vinayak, N., Premlata, S., Arathy, A., Shiv, K., 2019. Farmer producer organisations: Innovative institutions for upliftment of small farmers. Indian Journal of Agricultural Sciences 89(9), 1383–1392. https://doi.org/10.56093/ijas.v89i9.93451.